# **MINORITY GRADUATE EDUCATION**

# **DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES**

**Division of Human Resource Development** 

**Deadline Dates for Submission:** 

April 12, 1999 (February 1<sup>st</sup> in subsequent years)



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Appendix A: NSF Form 1030HRD

## MINORITY GRADUATE EDUCATION (MGE) PROGRAM

**Submission dates:** Full proposals: April 12, 1999 (February 1<sup>st</sup> in subsequent years)

#### INTRODUCTION

The U.S. continues to suffer from a long-standing underrepresentation of minorities among science, mathematics and engineering doctorates. This loss of talent has serious consequences for the nation's ability to compete in a world economy driven by technological advances, as well as for a large segment of the nation's citizens who suffer loss of opportunity. This underrepresentation is evident in all sectors: academic, business/industry, and government.

The Congress has consistently stressed the need for the National Science Foundation to expand its efforts to provide opportunities for underrepresented groups to participate in the Nation's science and engineering enterprise. Most recently, for example, in the House and Conference reports that accompanied the Foundation's FY 1999 appropriations (H. Rept. 105-610 and H. Rept. 105-769, respectively) - NSF was directed to increase its support for minority graduate education. A similar directive appeared in the Congressional reports that accompanied the FY 1998 appropriations process. The Minority Graduate Education (MGE) program, which was established in FY 1998 to meet this goal, is intended to increase significantly the number of students receiving doctoral degrees in the sciences (physical and life science disciplines), mathematics, and engineering (SME), with special emphasis on those population groups underrepresented in these fields. In addition, since lack of role models and mentors in the professoriate constitutes a significant barrier to producing minority SME graduates, NSF is particularly interested in increasing the number of minorities who will enter the professoriate in these disciplines. Specific objectives of the MGE program are (1) to develop and implement innovative models for recruiting, mentoring, and retaining minority students in SME doctoral programs and (2) to develop effective strategies for identifying and supporting underrepresented minorities who want to pursue academic careers.

Over the years, both government and private sectors have invested significant resources to increase minority representation in advanced SME study and careers. While some exemplary programs exist, limited progress has been made overall.

## **GENERAL PROGRAM INFORMATION**

**Eligible Fields and Disciplines.** NSF-supported fields in the physical and life sciences, mathematics and engineering are eligible for support.

## Eligible Institutions.

Doctoral degree granting institutions in the U.S. and its territories or consortia of such institutions composed of a lead graduate institution and one or more partner undergraduate institutions are eligible for support. Applications from institutions with documented success in translating minority matriculants into degree recipients are strongly encouraged. Projects are expected to be comprehensive, broadly covering SME departments; all participating departments must be explicitly identified in the proposal. Single graduate departments or individuals are ineligible for support.

## Funding Levels.

Up to ten MGE awards of up to five years duration are anticipated: only one is allowable per institution or consortium. Awards will be made up to a level of \$500,000 per year, with funding level depending on numbers of students served and factors related to project design. The purpose of these awards is to catalyze changes in institutional, departmental, and organizational culture and practices that will result in significant increases in recruitment, retention, degree conferral, and SME career (especially academic) entry. While provision of student support is allowable, proposers should provide strong justification for its inclusion, as well as a full description of the strategy for providing such support. [Please note that student support can only be provided to U.S. citizens, nationals, and permanent U.S. residents.] Awards will be made as cooperative agreements.

**Cost-sharing.** Cost-sharing by awardees and/or contributions from the private sector (e.g., foundations, business and industry, scientific and educational organizations, professional societies) is required and will be a factor in award decisions. Please see additional details on cost-sharing in the "Budget Justification" (Item 7 under the "Preparation and Submission of Proposals") section of this document.

## PROJECT DESCRIPTION

The goal of the MGE program is to increase the number of minority students pursuing advanced study, obtaining doctoral degrees, and entering the professoriate in SME disciplines. Institutions participating in this program are expected to engage in comprehensive cultural change that will lead to a sustained increase in the conferral of SME doctoral degrees significantly exceeding historic levels of performance. Institutional commitment will be assessed with respect to willingness and ability of participating institutions to align relevant financial and operational resources to the goals articulated by this program. To ensure commitment and the potential for success, the Chief Academic Officer (or an appropriate designee) should serve as Principal Investigator (PI) with Deans of Engineering and Arts and Sciences serving as co-Pls.

Proposals are expected to demonstrate:

- knowledge of those factors affecting the successful transition of minority students from undergraduate through graduate study and career entry in SME fields;
- prior success in dealing with affective (non-academic) components of graduate education that are necessary to ensure success of minority students in obtaining SME doctoral degrees;
- potential for successfully aligning similar existing programs (NSF-supported or otherwise) within, or outside of, the institution to ensure a comprehensive, integrated effort; and,
- ability to provide quality educational and research opportunities that will prepare students for successful SME careers (e.g., interdisciplinary research, and use of information technology, communications skills).

The proposal should clearly describe strategies to ensure effective recruitment, mentoring, retention, and degree completion of minority students. Under the MGE program, NSF intends to support a portfolio of projects that serve as effective models for addressing this issue. Proposals should clearly describe strategies for increasing minority student admissions; for creating supportive environments for these students at both the institutional and departmental levels; as well as for developing student interest in, and preparation for, academic careers (teaching and other faculty roles). Relevant strategies may include, for example, developing partnerships with undergraduate institutions that produce large numbers of minority SME majors (e.g., Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), Tribal Colleges); providing to minority undergraduates enriched academic and research experiences with strong emphasis on obtaining doctorates and pursuing academic careers in order to increase graduate school preparation; and/or developing student networks or mentoring programs at the undergraduate and/or graduate levels.

If institutions request student financial support, proposals must clearly explain the need being addressed, as well as student recruitment, selection and accountability criteria.

The MGE program stresses the building of a well-documented knowledge base of successful strategies. Awardees will be required to participate in a program-level evaluation by which NSF can assess quantitative gains in relevant measures for minority students and make qualitative assessments of the process of change. Shortly after awards have been made, project evaluators will be asked to assist a NSF contractor in developing a program evaluation that will mutually benefit the agency and project participants. MGE projects are expected to have the capability of collecting and analyzing data derived from program evaluation activities.

In addition, it is expected that MGE projects will complement this effort with their own formative evaluation. This evaluation should be the basis for strengthening implementation over the course of the project and for annual reporting to NSF that will be used to justify continued investment in the project. Proposals should provide suggestions of objectives, benchmarks, and indicators of progress that will inform reviewers of the proposers' understanding of essential factors for judging accountability, both quantitative (minority enrollment and Ph.D. production) and qualitative (the process of change in organizational culture). This evaluation must show an effective process by which student progress will be assessed on an annual basis.

To aid reviewers in assessing past performance of proposing institutions, proposals should include the following baseline data (for U.S. citizens, nationals, and permanent U.S. residents only):

- annual numbers of total and minority enrollment and Ph.D. degree conferral for each relevant SME department, disaggregated by population subgroup (e.g., African American) over the last four years;
- annual total and minority baccalaureate and master's degree conferral for SME departments of the submitting institution and undergraduate institutions that are part of an established consortium; and,
- annual number of underrepresented minority students who have left the same programs without completing their degrees over the past four years.

#### PREPARATION PROCEDURES

Full proposals must contain the following elements in the order indicated. Proposals that do not strictly adhere to the specified page limitations (given below) will be ineligible for consideration and will be returned without review. The proposals should be prepared and submitted in accordance with specific guidelines provided in this document and general guidelines provided in the *Grant Proposal Guide (NSF 99-2)*. Specifically, the proposal should include the following:

- 1. Cover Sheet for Proposals with Institutional Certifications (NSF Form 1207). Proposals should specify "MGE" and list the announcement number NSF 99-62 in the appropriate box. A short, informative title should be provided on the appropriate line.
- 2. **Project Summary.** Provide a brief (200 words or less) description of the project, clearly stating objectives and strategies to be employed.
- 3. Table of Contents (NSF Form 1359).

4. **Project Description.** The narrative (not to exceed 15 single-spaced typed pages) presents most of the information that determines whether a grant will be awarded.

Proposals should clearly articulate project objectives, planned outcomes with respect to recruitment, retention, and degree conferral of minority students; project monitoring guidelines; and how outcomes will be measured.

Proposals should (1) demonstrate understanding of issues and awareness of, and coordination with, related programs; (2) describe proposed activities, indicating unique aspects of the project and logic underlying its development; (3) state plans for institutionalization of these strategies after NSF support ends; (4) provide baseline statistics and describe anticipated project impact; (5) identify major project participants (institutional partners and key personnel), clearly articulating their capabilities and roles; (6) describe plans for coordination and management of activities; (7) describe grantee contributions to the project in terms of cost-sharing of supported activities; and (8) describe indicators and other evaluative information for monitoring annual progress.

If the prospective PI or co-PI(s) received support for related NSF activities within the past five years, a brief description of project(s) and outcomes must be provided in sufficient detail to enable reviewers to assess the value of results achieved. Projects should be identified by NSF award number, amount, period of support, title, summary of results, and list of publications and formal presentations that acknowledge the NSF award. Descriptions of prior NSF support should be limited to five pages and must be included as part of the 15-page limit.

Institutions or any consortia of partners that are award recipients of NSF programs that promote involvement of minorities in higher education must describe the value-added and complementarity of these efforts. Such programs include the Louis Stokes Alliances for Minority Participation (AMP), Centers of Research Excellence in Science and Technology (CREST), and Minority Institutions of Excellence (MIE).

- 5. Biographical Sketches and Individual Support. Biographical sketches of key project personnel (each no more than two pages in length) should highlight relevant experience in recruiting, academic and career mentoring, and producing minority SME Ph.D. recipients and knowledge of research methodologies, higher education, minority participation in advanced SME study and workforce entry, etc. Up to 10 major relevant publications may be listed for each of the key personnel.
- 6. **Budget and Allowable Costs [use NSF Form 1030HRD** (9/94). A budget for each year of support requested, as well as a cumulative budget for all years of support must be provided. No funds for faculty research or faculty salaries

may be requested. While provision of student support is allowable, proposers should provide strong justification for its inclusion, as well as a full description of the strategy for providing such support. Students receiving support must be citizens, nationals, or permanent residents of the U.S. Limited funds intended to partially defray the costs of research by students may also be requested. A copy of the relevant form is included as Appendix A to this document.

Institutional budgets should include requests for funds to support annual visits to NSF in Arlington VA for (1) the PI and lead representatives from participating institutions (if a consortia) and (2) project evaluators.

7. Budget Justification. A brief justification (two pages maximum) for funds in each budget category should be provided. This section should also include details of institutional cost-sharing, if any, and of other sources of support Any such commitment specified in the proposal will be referenced and included as a condition of an award resulting from this announcement. See the *Grant Proposal Guide* (*GPG, NSF 99-2*) for allowable cost-sharing activities. The proposed cost sharing must be shown in the second column, "NON-FEDERAL MATCHING FUNDS," on the proposal budget form (NSF Form 1030HRD).

The amount of cost-sharing must be shown in the proposal in enough detail to allow NSF to determine its impact on the proposed project. Documentation of availability of cost-sharing must be included in the proposal.

Only items that would be allowable under the applicable cost principles, if charged to the project, may be included as the grantee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (see OMB Circular A-110, Section 23). It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF grant.

All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF. Proposals must describe how non-NSF funds will be used to support project activities.

8. Timeline for Major Project Benchmarks (1 page maximum).

## **Proposal Submission.**

Proposals must be submitted electronically using the NSF FastLane system for electronic proposal submission and review. Electronically submitted proposals **MUST** 

be submitted by 5:00 PM, local time, April 12, 1999; February 1<sup>st</sup> in subsequent years. Copies of the signed proposal cover sheet must be submitted in accordance with the instructions identified below.

Submission of Signed Cover Sheets. For proposals submitted electronically via the NSF FastLane Project, the signed proposal Cover Sheet (NSF Form 1207) should be forwarded to the following address and received by NSF by April 19, 1999; February 8<sup>th</sup> in subsequent years.

National Science Foundation DIS-FastLane Cover Sheet 4201 Wilson Blvd. Arlington, VA 22230

A proposal can not be processed until the complete proposal (including signed Cover Sheet) has been received by NSF.

#### **FastLane Requirements**

The NSF FastLane system is available for electronic preparation and submission of a proposal through the Web at the FastLane Web site at <a href="http://www.fastlane.nsf.gov">http://www.fastlane.nsf.gov</a>. The Sponsored Research Office (SRO) or equivalent must provide a FastLane Personal Identification Number (PIN) to each Principal Investigator (PI) to gain access to the FastLane "Proposal Preparation" application. Pls that have not submitted a proposal to NSF in the past must contact their SRO to be added to the NSF PI database. This should be done as soon as the decision to prepare a proposal is made.

In order to use NSF FastLane to prepare and submit a proposal, the following are required:

Browser (must support multiple buttons and file upload)

- Netscape 3.0 or greater
- Microsoft Internet Explorer 4.0 or greater

PDF Reader (needed to view/print forms)

Adobe Reader 3.0 or greater

PDF Generator (needed to create project description)

- Adobe Acrobat 3.01 or greater
- Aladdin Ghostscript 5.10 or greater

A list of registered institutions and the FastLane registration form are located on the

FastLane Web page. For questions or problems concerning submitting a proposal via FastLane, please send an e-mail message to flprop@nsf.gov or call 703-306-1142.

#### REVIEW CRITERIA

Proposals will be reviewed in accordance with established NSF procedures and criteria described in *GPG*, as well as the following evaluation criteria:

#### A. Merit Review Criteria

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. Program officers charged with the oversight of the review process select these reviewers. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Special care is taken to ensure that reviewers have no immediate and obvious conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions; minority serving institutions, adjacent disciplines to that principally addressed in the proposal, etc.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

#### What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

#### What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

## **Integration of Research and Education**

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learner perspectives. Pls should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

## Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports. Pls should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

#### Additional Review Criteria.

**Plan.** Is the project informed by best practices gained from a working knowledge of producing minority SME doctorates? Is the approach sound with respect to the content and academic experiences to be provided? Does the plan describe how strategies for addressing affective (non-academic) components will contribute to changes in institutional culture that will likely result in increased numbers of minority SME doctorates and their successful career entry? Does the plan provide for sustained support of project goals and objectives beyond the period of NSF funding? Does the project employ, or will it develop, a particularly creative approach that might serve as a model for others in changing institutional culture?

Institutional Capacity and Commitment. Are designated personnel of sufficient expertise and background to ensure the success of the project? Do proposed personnel have a track record of success in this endeavor? Are levels of commitment commensurate with their anticipated contribution? Is there evidence of institutional commitment in recruiting and admissions outside of the disciplinary faculty to be involved? Is there evidence of institutional commitment in terms of cost-share and integration of this award with relevant resources and program efforts?

**Cooperative Relationships.** Does the project clearly build on the relative strengths of participants? Has a reasonable working relationship among collaborating parties been established and is this relationship clearly evidenced in the proposal? Is the proposed management plan sufficient to ensure effective communication among participating institutions so as to ensure full integration of efforts?

#### **B. Merit Review Process**

Most of the proposals submitted to NSF are reviewed by mail review, panel review, or some combination of mail and panel review.

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field(s) represented by the proposal. Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation. In most cases, the Program Officer will contact proposers after his or her recommendation to award or decline funding has been approved by his or her supervisor, the Division Director. This informal notification is not a guarantee of an eventual award. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals in this category. The time interval begins on the proposal deadline or target date. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after final programmatic approval has been obtained, the recommendation then goes to the Division of Grants and Agreements for review of business, financial and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with an NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.

#### Award Administration Information

#### A. Notification of the Award

Notification of the award, **through a cooperative agreement**, is made **to the submitting organization** by a Grants Officer in the Division of Grants and Agreements. The cognizant NSF Program Division administering the program will

advise organizations whose proposals are declined as promptly as possible. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator.

#### **B. Award Conditions**

Cooperative agreement awards are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, (NSF 95-26) available electronically on the NSF Web site. The GPM also is available in paper copy by subscription from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. The GPM may be ordered through the GPO Web site at: <a href="http://www.gpo.gov">http://www.gpo.gov</a>.

## C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented a new electronic project reporting system, available through FastLane, which permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and, other specific products and contributions. Reports will continue to be required annually and after the expiration of the grant, but PIs will not need to re-enter information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1998, Pls are required to use the new reporting format for annual and final project reports. Pls are strongly encouraged to submit reports electronically via FastLane. For those Pls who cannot access FastLane, paper copies of the new report formats may be obtained from the NSF Clearinghouse as specified above. NSF expects to require electronic submission of all annual and final project reports via FastLane beginning in October, 1999.

#### D. New Awardee Information

If the submitting organization has never received an NSF award, it is recommended

that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF *Grant Policy Manual* which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 97-100) includes information on Administration and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site at: <a href="http://www.nsf.gov/cgi-bin/getpub?nsf97100">http://www.nsf.gov/cgi-bin/getpub?nsf97100</a>.

#### RELATIONSHIP TO OTHER NSF EDUCATION PROGRAMS

The MGE Program is among those that *target underrepresented minorities* in science, engineering, mathematics, and technology and that *promote innovation in education for all students*. Other related programs include the following: Louis Stokes Alliances for Minority Participation (LSAMP), Centers of Research Excellence in Science and Technology (CREST), Historically Black Colleges and Universities-- Undergraduate Program (HBCU-UP), Collaborative Integration of Research and Education (CIRE), and Integrated Graduate Education Research and Training (IGERT).

Principal Investigators may find that their proposal fits the objectives of several Programs at NSF. They are encouraged to review the scope of related programs on the NSF web pages at <a href="http://www.nsf.gov/">http://www.nsf.gov/</a> or and consider where their proposal might compete best.

#### OTHER PROGRAMS OF INTEREST

The NSF Guide to Programs (NSF 99-4) is a compilation of funding opportunities for research and education in science, mathematics, and engineering. General descriptions of NSF programs, research areas, and eligibility for proposal submission are provided in each chapter. The NSF Guide to Programs is only available electronically. Many NSF programs offer announcements concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the *Grant Proposal Guide* (GPG) (NSF 99-2).

Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the Electronic Bulletin available on the NSF Web site at: <a href="http://www.nsf.gov/">http://www.nsf.gov/</a>. Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

## **ADDITIONAL INFORMATION**

Questions not addressed in this publication may be directed to Dr. Costello L. Brown, Program Director, Division of Human Resource Development – EHR Room 815, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA, 22230, telephone number (703) 306-1632, FAX number (703) 306-0423; e-mail clbrown@nsf.gov. Direct contact to discuss potential projects is encouraged.

## APPENDIX A

The Foundation provides awards for research and education in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for the research findings or their interpretation.

The Foundation welcomes proposals from all qualified scientists and engineers and strongly encourages women, minorities, and persons with disabilities to compete fully in any of the research and education related programs described here. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF projects. See the program announcement or contact the program coordinator at (703) 306-1636.

The National Science Foundation has TDD (Telephonic Device for the Deaf) capability, which enables individuals with hearing impairment to communicate with the Foundation about NSF programs, employment, or general information. To access NSF TDD, dial (703) 306-0090; for FIRS, 1-800-877-8339.

#### PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. Information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the application review process; to applicant institutions/grantees to provide or obtain data regarding the application review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/ Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer; Division of Administrative Services; National Science Foundation; Arlington, VA 22230.

HRD PROPOSAL BUDGET				FOR NSF USE ONLY				
ORGANIZATION					ON (MONTHS)			
ONGARIZATION				' ' ' '		Proposed		
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR				AWARD	NO.			
A. SENIOR PERSONNEL: PVPD, Co-PI's, Faculty and Other Senior Associates	NS	F FUNDE	D	FUNDS		N-FEDERAL	TOTAL	
(List each separately with title, A.6. show number in brackets)	<del></del>	RSON-M		REQUESTED		ATCHING	PROJECT	
	CAL	ACAD.	SUMR.	FROM NSF		FUNDS	COSTS	
1.	<del> </del>			\$	\$		\$	
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5. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)	+	-			+			
6. ( ) TOTAL SENIOR PERSONNEL (1-5) B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)	+	<del> </del>			-			
1. ( ) POST DOCTORAL ASSOCIATES     2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	Contraction of the Contraction o							
3. ( ) GRADUATE STUDENTS	<u></u>	J			<del>                                     </del>	-		
4. ( ) UNDERGRADUATE STUDENTS					1			
5. ( ) SECRETARIAL - CLERICAL					1			
6. ( ) OTHER					1			
TOTAL SALARIES AND WAGES (A+B)								
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)								
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)								
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH IT	EM EXCE	EDING \$	1000):					
TOTAL PERMANENT EQUIPMENT								
E. TRAVEL 1. DOMESTIC (INCL. CANADA AND U.S. POSSESSIONS)								
2. FOREIGN								
E DARTIGIOANT CUIDDORT COCTO								
F. PARTICIPANT SUPPORT COSTS Stipend Travel S	ubsist.	Other						
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c. Undergraduate #\$\$		\$		44 9				
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G. OTHER DIRECT COSTS								
1. MATERIALS AND SUPPLIES					*****			
2. PUBLICATION COSTS/PAGE CHARGES				-				
3. CONSULTANT SERVICES								
4. COMPUTER (ADPE) SERVICES								
5. SUBCONTRACTS								
6. OTHER								
TOTAL OTHER DIRECT COSTS								
H. TOTAL DIRECT COSTS (A THROUGH G)								
I. INDIRECT COSTS (SPECIFY)								
TOTAL INDIRECT COSTS								
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)				ļ				
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS	SEE GPM	252 AN	D 253)					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				\$	\$		\$	
PVPD TYPED NAME & SIGNATURE*	DATE					SF USE ONL		
				INDIRECT COST RATE VERIFICATION				
INST. REP. TYPED NAME & SIGNATURE*	DATE		Date C	recked	Date of Rate Sheet		Initiate-DGA	

#### **NATIONAL SCIENCE FOUNDATION**

ARLINGTON, VA 22230

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

RETURN THIS COVER SHEET TO ROOM P35 IF YOU DO NOT WISH TO RECEIVE THIS MATERIAL OR IF CHANGE OF ADDRESS IS NEEDED INDICATE CHANGE INCLUDING ZIP CODE ON THE LABEL (DO NOT REMOVE LABEL)

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